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Predictors of Symptom Appraisal for Patients with Acute Myocardial Infarction

**Marla J. De Jong, Kyungh An,
Candace C. Cherrington, Debra K. Moser
University of Kentucky**



Presenter Disclosure Information

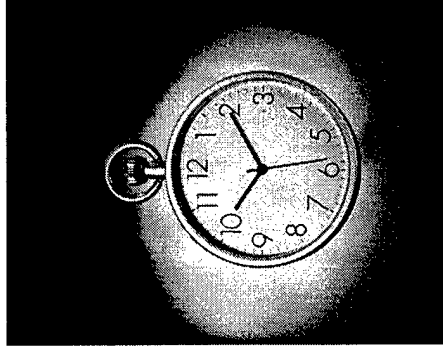
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Physical Symptoms of AMI

- **Most patients with AMI experience physical symptoms**
 - **Chest, jaw, and/or arm pain**
 - **“Heartburn”/nausea/vomiting**
 - **Dyspnea**
 - **Diaphoresis**
 - **Vertigo**
 - **Fatigue**
-

Delay in Seeking Treatment

- **Median delay times 2-6.4 hrs (Goff et al., 1999; Goldberg et al., 2002; Dracup et al., 2003)**
- **Delay times have not changed over past 30 years**



Consequences of Delay

- **Higher mortality** (Gibler et al., 2002; Newby et al. 1996, Maynard et al., 1989)
 - **Reduced benefit of PCI** (Kent et al., 2001)
 - **Larger infarct size** (Liem et al., 1998)
 - **Higher incidence of shock** (Newby et al., 1996)
 - **Worse heart failure/LV function** (Liem et al., 1998; Newby et al., 1996)
-

Perception of Symptom Seriousness

- **Patients who perceived symptoms as more serious had shorter delays** (Burnett et al., 1995; Leslie et al., 2000; Wielgosz et al., 1988; Dracup & Moser, 1997; Dracup et al., 1997; McKinley et al., 2000; Johansson et al., 2004; Kentsch et al., 2002)
- **Involves cognitive-perceptual interpretation of somatic data gathered by the senses**
 - Subject to psychological & social influences
- **Only 33-44% pts with AMI perceived symptoms as serious** (Dracup & Moser, 1997; Hartford et al., 1993)

Purpose

- To identify predictors of symptom appraisal as serious for patients with symptoms of AMI



Methods: Design

- **Correlational sub-study of a comparative survey examining gender differences in the reasons individuals delayed seeking treatment for symptoms of AMI**
-

Methods: Sample Inclusion Criteria

- Diagnosis of AMI confirmed by elevated cardiac enzymes and typical ECG changes



Methods: Sample Exclusion Criteria

- **Ruled out for AMI**
 - **AMI occurred while hospitalized**
 - **Dementia or serious cognitive impairment or psychiatric illness**
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Methods: Settings

- Inpatients with AMI
 - Community hospital located in Midwest
 - Academic medical center located in Midwest



Methods: Data Collection



- IRB approval obtained at all sites
- Patients gave written informed consent
- Nurse research assistants collected data
- Data collected when patient free of pain and hemodynamically stable

Methods: Predictor Variables

- **Sociodemographic variables**
 - **Clinical variables**
 - **Emotional-cognitive variables**
-

Methods: Measurement

■ Predictor Variables

– Sociodemographic variables

- Age**
- Gender**
- Income**
- Education**
- Alone or with some when symptoms began**

Methods: Measurement

- **Predictor Variables (cont.)**
 - **Clinical variables**
 - **Killip class**
 - **Pain intensity**
 - **Comorbidity – previous AML, angina, PCI, or CABG; history of CAD without event**
-

Methods: Instruments

- **Predictor variables (cont.)**
 - **Emotional-cognitive variables – modified Response to Symptoms Questionnaire**
 - **Anxiety associated with symptoms**
 - **Perceived ability to control symptoms**
 - **Determined symptoms as intermittent**
 - **Symptoms attributed to heart**
 - **Did not know symptoms of AMI**
 - **Did not realize importance of symptoms**
-

Methods: Outcome Variables



- Symptom seriousness -
Response to Symptoms
Questionnaire
 - 1 Not at all
 - 2 Somewhat
 - 3 Moderate
 - 4 Extreme

Methods: Data Analysis

- **Bivariate: Spearman's rho or Chi-square**
 - **Multivariate: Hierarchical multiple regression model for symptoms seriousness**
 - Step 1: Demographic variables
 - Step 2: Clinical variables
 - Step 3: Emotional-cognitive variables
 - **Diagnostics: No multicollinearity problems based on variable inflation factor and tolerance values**
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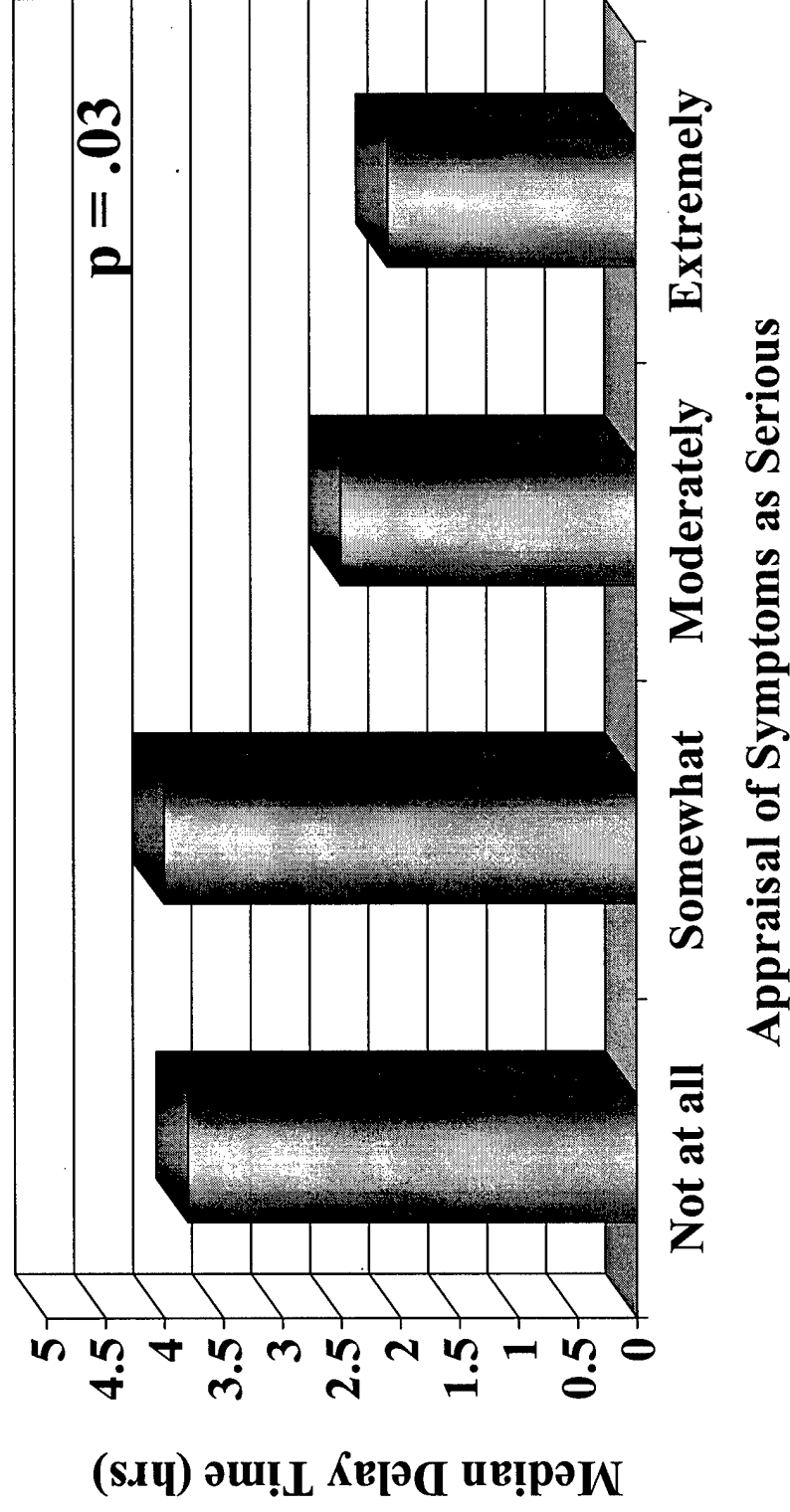
Results: Sociodemographic Characteristics (N = 193)

Characteristic	Mean \pm SD or N (%)
Age (years)	60.3 \pm 13.3
Female gender	95 (49.2%)
Annual income \$20,001-\$40K	56 (29.0%)
Education (years)	12.8 \pm 3.0
With someone at symptom onset	135 (69.9%)
White ethnicity	176 (91.2%)

Results: Seriousness of Symptoms (N = 193)

Seriousness of Symptoms	N (%)
Not at all	41 (21.2%)
Somewhat	54 (28.0%)
Moderate	47 (24.4%)
Extreme	51 (26.4%)

Median Delay Times



Overall median delay time: 3.1 (1.1,12.8) hours

Bivariate Comparisons

Sociodemographic	Clinical	Emot-Cognitive
Age	Killip class	Anxiety*
Gender*	Pain	Perceived control
Annual Income*	Comorbidity	Sxs intermittent
Education		Knowledge*
Alone vs. w/ another		Importance*
		Symptom attribution*

*p < .05 using Spearman's rho or Chi-Square depending on level of measurement

Appraisal of Symptoms as Serious in AMI

Step 1 Variables	F	Adj R ²	Beta	P
	1.54	.02		
Age			.06	.45
Gender			.02	.84
Income			.09	.20
Education			.04	.63
Alone vs. with someone			.03	.67

Appraisal of Symptoms as Serious in AMI

Step 2 Variables	F	Adj R ²	Beta	P
	1.29	.01		
Killip class			-.01	.86
Pain intensity			.04	.60
Comorbidity			.07	.32

Appraisal of Symptoms as Serious in AML

Step 3 Variables	F	Adj R ²	Beta	P
	6.99**	.34		
Anxiety level			.54	<.001**
Perceived control			.04	.61
Symptoms intermittent			.03	.67
How attributed symptoms			.16	.02*
Knowledge of symptoms			.06	.48
Importance of symptoms			.04	.68

** $P < .001$; * $P < .05$

Clinical Implications/Conclusions

- **Anxiety has a major impact on how patients appraise seriousness of symptoms**
- **Demographic & clinical variables are not associated with symptom appraisal**
- **How patients appraise symptoms is a prerequisite to design and implementation of interventions designed to reduce delay time**

Results: Clinical Characteristics

(N = 193)

Characteristic	Mean \pm SD or N (%)
LVEF (%)	45.0 \pm 10.1
Killip class	
I/II	179 (92.7%)
III/IV	12 (6.2%)
History CAD without event	21 (10.9%)
History AMI / Angina	59 (30.6%) / 72 (37.3%)
History CABG / PCI	19 (9.8%) / 41 (21.2%)
Pain intensity (0-10 scale)	7.5 \pm 2.8